



Volunteer Lake Assessment Program Individual Lake Reports

OTTERNICK POND, HUDSON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,752	Max. Depth (m):	3.7	Flushing Rate (yr ⁻¹)	20.5
Surface Area (Ac.):	34	Mean Depth (m):	1.9	P Retention Coef:	0.4
Shore Length (m):	1,800	Volume (m ³):	261,500	Elevation (ft):	170

TROPHIC CLASSIFICATION

Year	Trophic class
1979	EUTROPHIC
1998	EUTROPHIC

KNOWN EXOTIC SPECIES

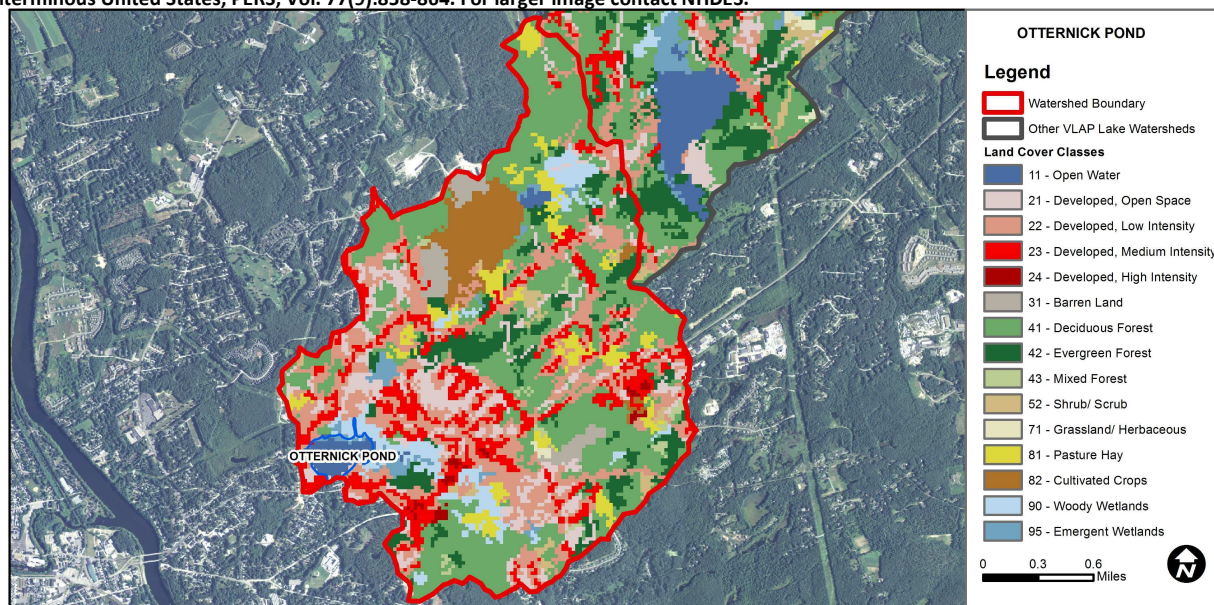
Variable Milfoil
Fanwort

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	1.74	Barren Land	2.35	Grassland/Herbaceous	0.13
Developed-Open Space	8.68	Deciduous Forest	30.87	Pasture Hay	5.06
Developed-Low Intensity	19.2	Evergreen Forest	7.43	Cultivated Crops	4.99
Developed-Medium Intensity	11.1	Mixed Forest	0.71	Woody Wetlands	4.48
Developed-High Intensity	0.63	Shrub-Scrub	1.15	Emergent Wetlands	1.53



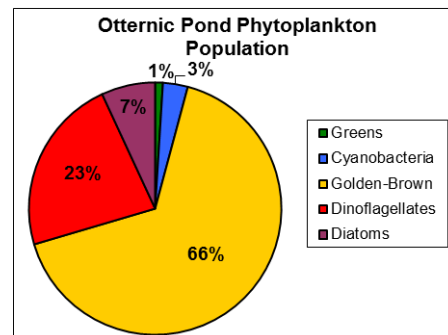
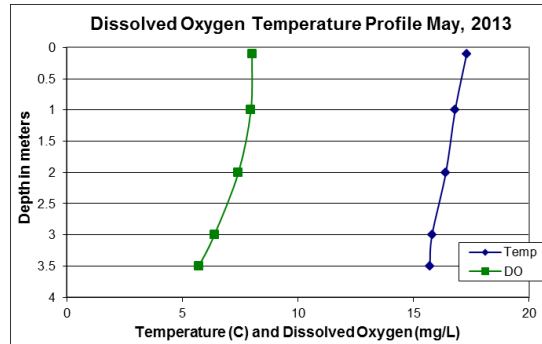
VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

OTTERNIC POND, HUDSON, NH

2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- CHLOROPHYLL-A:** Chlorophyll levels were slightly elevated May through August and increased to levels indicative of an algal bloom in September. The 2013 average levels were consistent with 2012 however much greater than the state median.
- CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity were elevated and much greater than the state medians and indicative of an urbanized watershed.
- TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were greater than the state median, remained stable from May through August, increased in September likely due to the algal bloom, and average levels were the lowest measured since monitoring began. Hypolimnetic phosphorus was elevated, particularly in July and August when water levels were lower and turbidity was higher. Benson and Glover Inlets and Outlet phosphorus levels were slightly elevated but remained stable throughout the summer and average levels were the lowest measured since monitoring began.
- TRANSPARENCY:** Transparency was lower in May, June and September likely due to significant storm events prior to sampling and algal growth. Transparency improved in July and August and was approximately equal to 2012 value.
- TURBIDITY:** Epilimnetic turbidity was slightly elevated in September due to the algal bloom. Hypolimnetic turbidity was elevated in July and August likely due to bottom sediment. Benson and Glover Inlets and Outlet turbidities were low throughout the summer.
- pH:** pH levels were sufficient to support aquatic life however have historically exceeded critical ranges.
- RECOMMENDED ACTIONS:** The increased frequency and intensity of storm events highlights the importance of managing stormwater runoff in the watershed. Educate lake and watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "Homeowner's Guide to Stormwater Management". Chloride and conductivity levels have consistently been elevated indicating that winter maintenance activities are impacting the pond. Encourage local road agents and winter maintenance companies to obtain a NH Voluntary Salt Applicator License through the UNH Technology Transfer Center's Green SnowPro Program.



Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	NVS	VS	ntu	
Benson Inlet			48	279.3	19			0.83	8.11
Epilimnion	35.32	8.18	49	278.2	21	2.12	2.55	0.96	6.99
Hypolimnion				287.0	33			1.89	6.79
Glover Inlet			45	269.8	18			0.71	7.32
Outlet			48	279.4	16			0.59	7.30

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: < 230 mg/L (chronic)

E. coli: > 88 cts/100 mL – public beach

E. coli: > 406 cts/100 mL – surface waters

Turbidity: > 10 NTU above natural level

pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L

Chlorophyll-a: 4.58 mg/m³

Conductivity: 40.0 uS/cm

Chloride: 4 mg/L

Total Phosphorus: 12 ug/L

Transparency: 3.2 m

pH: 6.6

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	N/A	Ten consecutive years of data necessary.	Chlorophyll-a	N/A	Ten consecutive years of data necessary.
Conductivity	N/A	Ten consecutive years of data necessary.	Transparency	N/A	Ten consecutive years of data necessary.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary.

